

What is claimed is:

1. An imaging apparatus comprising:

an image pickup device having an imaging area in which a plurality of light receiving elements are two-
5 dimensionally placed;

an optical zoom device adapted to expand or reduce an image formed on a light receiving surface of the image pickup device; and

a controller having a first control mode adapted
10 to output picture data by using a signal from a first area in said imaging area, a second control mode adapted to output the picture data by using the signal from a second area smaller than said first area, exerting control so that, in the case of said first
15 control mode, said picture data is outputted by the signal having mixed the signals of the plurality of light receiving elements, and in the case of said second control mode, said picture data is outputted by an unmixed signal of each of the plurality of light
20 receiving elements or the signal having mixed the signals of the plurality of light receiving elements less than the number thereof mixed in the case of said first control mode, and when zooming with said optical zoom device, said controller controls it to operate in
25 said first control mode.

2. The imaging apparatus according to claim 1,

wherein said controller has a third control mode adapted to output the picture data by using the signal from a third area smaller than said second area, and in the case of said third control mode, said picture data
5 is outputted by an unmixed signal of each of the plurality of light receiving elements or the signal having mixed the signals of the plurality of light receiving elements less than the number thereof mixed in the case of said first control mode, and in said
10 second control mode, said picture data is outputted by thinning out the signals of a plurality of lines from said second area.

3. The imaging apparatus according to claim 1,
15 comprising:

a timing signal generation device adapted to generate a timing signal adapted to control timing adapted to read said charge to said image pickup device and the timing adapted to mix or transfer said charge;
20 and

a timing signal control device adapted to control said timing signal generation device based on control of said controller.

25 4. The imaging apparatus according to claim 1, further comprising:

a zoom operation device for a user to operate

expansion or reduction of said picture data; and

said control device determines a processing scaling factor according to operation of said zoom operation device.

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5. The imaging apparatus according to claim 4, wherein, in the case where the user performs the operation for reduction with said zoom operation device, said controller determines a reduction scaling factor according to said operation for reduction, and in the case where the user performs the operation for expansion with said zoom operation device, it determines an expansion scaling factor according to said operation for expansion.

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6. The imaging apparatus according to claim 4, wherein said timing signal control device controls said timing signal generation device to generate said timing signal adapt to mix and transfer the charges of said light receiving elements equal to said number of mixed pixels in the area according to said processing scaling factor on said image pickup device.

7. The imaging apparatus according to claim 1, further comprising:

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a zoom operation device for a user to operate expansion or reduction of said picture data or said

image; and

an optical zoom control device adapted to control the operation of said optical zoom device according to the operation of said zoom operation device; and

5 said controller determines said processing scaling factor according to a process of said optical zoom control device controlling said optical zoom device and the operation of said zoom operation device.

10 8. The imaging apparatus according to claim 7, wherein, in the case where the user performs the operation for further reduction with said zoom operation device in a state in which said optical zoom device is on the furthest wide-angle side, said
15 controller determines a reduction scaling factor according to said operation for reduction, and in the case where the user performs the operation for further expansion with said zoom operation device in a state in which said optical zoom device is on the furthest
20 telescopic side, it determines an expansion scaling factor according to said operation for expansion.

9. The imaging apparatus according to claim 7, wherein, in the case where the user performs the
25 operation for further reduction with said zoom operation device in a state in which said optical zoom device is on the furthest wide-angle side, said timing

signal control device controls said timing signal generation device to generate said timing signal adapted to mix and transfer the charges of said light receiving elements in the expanded area equal to said
5 number of mixed pixels in said image pickup device.

10. The imaging apparatus according to claim 7, wherein, in the case where the user performs the operation for further expansion with said zoom
10 operation device in a state in which said optical zoom device is on the furthest telescopic side, said timing signal control device controls said timing signal generation device to generate said timing signal adapted to mix and transfer the charges of said light
15 receiving elements in the reduced area equal to said number of mixed pixels in said image pickup device.

11. A control method of an imaging apparatus including an image pickup device having an imaging area in which
20 a plurality of light receiving elements are two-dimensionally placed and an optical zoom device adapted to expand or reduce an image formed on a light receiving surface of the image pickup device, wherein:

it has a first control mode adapted to output
25 picture data by using a signal from a first area in said imaging area, a second control mode adapted to output the picture data by using the signal from a

second area smaller than said first area, and exerts control so that, in the case of said first control mode, said picture data is outputted by the signal having mixed the signals of the plurality of light receiving elements, and in the case of said second control mode, said picture data is outputted by an unmixed signal of each of the plurality of light receiving elements or the signal having mixed the signals of the plurality of light receiving elements less than the number thereof mixed in the case of said first control mode, and when zooming with said optical zoom device, it is controlled to operate in said first control mode.

12. An imaging apparatus comprising:

an image pickup device having an imaging area in which a plurality of light receiving elements are two-dimensionally placed; and

a controller having a first control mode adapted to output picture data by using a signal from a first area in said imaging area, a second control mode adapted to output the picture data by using the signal from a second area smaller than said first area, exerting control so that, in the case of said first control mode, said picture data is outputted by the signal having mixed the signals of the plurality of light receiving elements, and in the case of said second control mode, said picture data is outputted by

an unmixed signal of each of the plurality of light receiving elements or the signal having mixed the signals of the plurality of light receiving elements less than the number thereof mixed in the case of said
5 first control mode; and

a drive circuit adapted to change storage time of optical charges in said image pickup device according to said number of mixed signals.

10 13. An imaging apparatus comprising:

an image pickup device having an imaging area in which a plurality of light receiving elements are two-dimensionally placed; and

a controller having a first control mode adapted
15 to output picture data by using a signal from a first area in said imaging area, a second control mode adapted to output the picture data by using the signal from a second area smaller than said first area, exerting control so that, in the case of said first
20 control mode, said picture data is outputted by the signal having mixed the signals of the plurality of light receiving elements, and in the case of said second control mode, said picture data is outputted by an unmixed signal of each of the plurality of light
25 receiving elements or the signal having mixed the signals of the plurality of light receiving elements less than the number thereof mixed in the case of said

first control mode, and changing an amplification factor adapted to amplify the signal from said imaging area according the number of said mixed signals.